

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATIONS:

Specification at page 8, line 8:

the outer periphery end comes in contact with the bend portion at the caulked portion, causing the cap and the filter to be electrically connected to each other.

Specification at page 13, line 5:

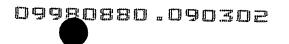
the outer periphery end comes in contact with the bend portion at the caulked portion, then the cap and the filter are electrically connected to each other.

Specification at page 14, line 22:

the step of forming the caulked portion comprises a step of electrically connecting the cap and the filter to each other by contacting the outer periphery end at the caulked portion with the bend portion so that the caulked portion includes both states of contact, that is, (i) a strong contact portion and (ii) a weak contact portion, between the surface of the outer periphery end of the flange and the bend portion.

Specification at page 19, line 10:

Fig. 1 (a) shows a sectional view of a top sealing plate for battery in one embodiment of the present invention. Fig. 1 (b) is a partly enlarged view of same. Fig. 2 (a) shows a sectional view of a battery using the top sealing plate. Fig. 2 (b) is a partly enlarged view of same. The top sealing plate 22 includes a cap 11, filter 3, and rubber valve body 12. The filter 3 has an upper opening formed in the top surface thereof and a valve hole 9 formed in the bottom surface thereof. The rubber valve body 12 is used as an example



as to close the valve hole 9. The cap 11 is disposed so as to close the upper opening of the filter 3. The cap 11 includes a convex portion 6 formed at the center thereof and a flange portion filter 14 disposed around the convex portion 6. A gas vent hole 10 is formed in the flange portion filter 14. The filter 3 has a dish-shape, and in the center of the filter 3 is formed the valve hole 9. When gas is generated in the battery, the gas is discharged out of the battery through the valve hole 9 and gas vent hole 10. The cap 11 and filter 3 are made of electrically conductive material such as metals. Projection 31 is formed on the surface or back of the outer periphery end of the flange 14 of the cap 11. The projection 31 includes at least one out of a plurality of small projections 16, a plurality of bulges 15, and peripheral edge 17 extending from the outer periphery end which are described later.

Specification at page 25, line 21:

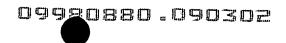
Fig. 5 is a sectional view showing the method of processing top sealing plate 22 shown in Fig. 4. In Fig. 5, the top sealing plate 22 once caulked and set up is supported by the lower die 18 of the press. Wedge-like portion 21 where the tip of the upper die 20 of the press has wedge-like sharpness at several portions is pressed against the caulked portion 13 at the outer periphery of the top sealing plate 22, thereby locally applying pressures thereto. The wedge-like portion 21 of the upper die is used as an example of a protuberant tool. In this way, the wedge-like tip portion 21 bites into the top sealing plate 22, and thereby, the top sealing plate 22 is deformed. Thus, generation of loosening due to springback of the caulked portion can be prevented. Further, it is possible to make perfect the state of contact between the cap 11 and the filter 3.

IN THE CLAIMS:

- 1. (Amended) A top sealing plate used for a battery,
- 2 comprising:

3	a filter, a cap, and a valve body,
4	wherein said filter includes a valve hole and upper opening;
5 6	said cap has a convex portion, and a flange portion disposed around said convex portion;
7 8	an opening end of said upper opening of said filter has a bend portion;
9 10 11	an outer periphery end of said flange portion of said cap and said bend portion include a caulked portion that is caulked and jointed to each other;
12 13	said caulked portion is formed by caulking while said outer periphery end of said flange is positioned in said bend portion;
14 15	said valve body is disposed to cover said valve hole, in a space formed between said cap and said filter;
16 17 18	said caulked portion includes both contact states of (i) a strong contact portion and (ii) a weak contact portion, between the surface of the outer periphery end of said flange and said bend portion; and
19 20 21	said cap and said flange portion filter are electrically connected to each other by the contact with said outer periphery end and said bend portion at said caulked portion.
1 2	6. (Amended) A top sealing plate used for a battery, comprising:
3	a filter, a cap, and a valve body,
4	wherein said filter includes a valve hole and upper

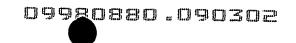
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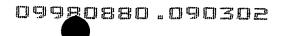
5	opening;
6 7	said cap has a convex portion, and a flange portion disposed around said convex portion;
8 9	an opening end of said upper opening of said filter has a bend portion;
10 11 12	an outer periphery end of said flange portion of said cap and said bend portion include a caulked portion that is caulked and jointed to each other;
13 14	said caulked portion is formed by caulking while said outer periphery end is positioned in said bend portion;
15 16	said valve body is disposed to cover said valve hole, in a space formed between said cap and said filter;
17 18	a surface of said outer periphery end of said flange has a projection;
19 20	said outer periphery end including the plurality of projections and said bend portion are caulked;
21 22	said strong contact portion is formed with said projection contacted on said bend portion; and
23 24 25	said cap and said <u>flange-portion filter</u> are electrically connected to each other, by contact between said outer periphery end at the caulked portion and said bend portion.
1 2	12. (Amended) A top sealing plate used for a battery, comprising:

3	a filter, a cap, and a valve body,
4 5	wherein said filter includes a valve hole and upper opening;
6 7	said cap has a convex portion, and a flange portion disposed around said convex portion;
8 9	an opening end of said upper opening of said filter has a bend portion;
10 11 12	an outer periphery end of said flange portion of said cap and said bend portion include a caulked portion that is caulked and jointed to each other;
13 14	said caulked portion is formed by caulking while said outer periphery end is positioned in said bend portion;
15 16	said valve body is disposed to cover said valve hole, in a space formed between said cap and said filter;
17 18	a surface of said outer periphery end of said flange has a projection;
19 20	said outer periphery end including said projection and said bend portion are caulked;
21 22 23	said cap and said flange portion filter are electrically connected to each other, by contact between said outer periphery end at said caulked portion and said bend portion;
24 25 26	the distance from a mating face of said filter and cap to the peak of said projection is greater than the thickness of said flange portion; and

27 28 29	each of the peaks has a stronger contact pressure against said bend portion of said filter as compared with zones other than said peaks.
1 2	14. (Amended) A top sealing plate used for a battery, comprising:
3	a filter, a cap, and a valve body,
4 5	wherein said filter includes a valve hole and upper opening;
6 7	said cap has a convex portion, and a flange portion disposed around said convex portion;
8 9	an opening end of said upper opening of said filter has a bend portion;
10 11 12	an outer periphery end of said flange portion of said cap and said bend portion include a caulked portion that is caulked and jointed to each other;
13 14	said caulked portion is formed by caulking while said outer periphery end is positioned in said bend portion;
15 16	said valve body is disposed to cover said valve hole, in a space formed between said cap and said filter;
17 18 19	said cap and said flange portion filter are electrically connected to each other, by contact between said outer periphery end at said caulked portion and said bend portion;
20 21	said caulked portion includes an integral projection such that said outer periphery end and said bend portion are integrally



22	projected;
23 24 25	said integral projection is formed by pressing a protuberant tool from above the bend portion, in a state that said outer periphery end is positioned in said bend portion; and
26 27	said integral projection has a stronger contact pressure as compared with zones other than said integral projection.
1	16. (Amended) A battery, comprising:
2	a battery case, a positive electrode, a negative electrode, electrolyte, a gasket, and a top sealing plate,
4 5	wherein said positive electrode, said negative electrode, and said electrolyte are disposed in said battery case;
6	said battery case has an opening;
7 8 9	said top sealing plate is disposed at the opening of said battery case, in a state of being electrically insulated by said gasket so as to close said battery case;
10 11	said filter is electrically connected to said positive electrode;
12 13	said top sealing plate comprises a filter, cap, and valve body;
14	said filter has a valve hole and upper opening;
15 16	said cap has a convex portion, and a flange portion disposed around said convex portion;



17 18	an opening end of said upper opening of said filter has a bend portion;
19 20 21	an outer periphery end of said flange portion of said cap and said bend portion include a caulked portion that is caulked and joined to each other;
22 23	said caulked portion is formed by caulking while said outer periphery end is positioned in said bend portion;
24 25	said valve body is disposed to cover said valve hole, in a space formed between said cap and said filter;
26 27 28 29	said caulked portion includes both states of contact of (i) a strong contact portion and (ii) a weak contact portion, between the surface of the outer periphery end of said flange and said bend portion; and
30 31 32	said cap and said <u>flange portion filter</u> are electrically connected to each other, due to contact established between said outer periphery end and said bend portion at said caulked portion.
1 2	23. (Amended) A method of manufacturing a battery, comprising the steps of:
3	(a) disposing a positive electrode, a negative electrode, and electrolyte in a battery case;
5	(b) manufacturing a top sealing plate;
6 7	(c) electrically connecting said filter and said positive electrode; and
8	(d) disposing said top sealing plate at the opening of said

